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September 15, 2023

**Re: Bitterroot Front Project Environmental Assessment**

Sent electronically to: <mailto:comments-northern-bitterroot-stevensville@usda.gov>

Dear Mr. Anderson,

Thank you for the opportunity to comment on scoping for the Bitterroot Front Project Environmental Assessment (EA).

*Management* on the Bitterroot National Forest can be considered a disturbance and in fact historic management on the Bitterroot National Forest made it a poster child for the National Forest Management Act (NFMA, 1976). Unfortunately, little has changed under the current leadership.

Given the large scale, scope, and complexity of the 144,000 acre project, the proposed commercial harvest in Inventoried Roadless Areas, the presence of grizzly bear and connectivity to habitat in the Bitterroot Ecosystem Recovery area, the notable peregrine falcon and sensitive plant species within the project area, and the controversial nature of the project itself; the appropriate level of environmental analysis under NEPA is an Environmental Impact Statement (EIS).

**To declare an Emergency Action Determination (EAD) at this late stage is an abuse of the Infrastructure Investment and Jobs Act and an abuse of authority**

The Bitterroot Front Project and public involvement has been on the record at least since Fall of 2019. Most likely planning began years before. Many of us, myself included attended public meetings, field trips and commented on one or more earlier phases. In the four plus years since public involvement began, Emergency Action Determination was NOT mentioned in 2019 meeting notes, the April 20, 2022 scoping letter or proposed action, or during field trips including the 7/2022 field trip I participated.

The August 15, 2023 EA availability letter suddenly declared the Bitterroot Front project qualified for EAD based on four 'firesheds' on the forest within priority areas.

"The Secretary of Agriculture has determined that the Forest Service **may** carry out Authorized Emergency Actions under section 40807 of the Infrastructure Investment and Jobs Act (PL 117-58) on National Forest System lands in 250 identified High Risk Firesheds, four of which are within the project area."

I searched the Infrastructure Act for 'fireshed' and it is not mentioned. Fireshed is mentioned only once in the EA, on the introduction page with language lifted from the EA release. Similarly, airsheds and watersheds are discussed in the fire and fuels analysis, firesheds are not.

I was unable to find identification or descriptions of the four 'firesheds', in the EA. Section 40803, Wildfire Risk Reductions, section (c)(6) requires maps be published and I assume made available to the public. I request the EAD be removed for the entire project area until the 'firesheds' that form the basis for the EAD are clearly disclosed in order to provide the public the opportunity for meaningful and

substantive comments. The EA (unnumbered back of title page) states, "The EAD requires the opportunity for public comment during the preparation of the environmental assessment for authorized emergency actions. Actions under this section are not subject to the objection process and a court shall not enjoin an authorized emergency action under this section *in some circumstances*." (Emphasis added). While 40807 does not provide for filing an objection (d), the 'some circumstances' the EA fails to disclose can be found under section (e),

(e) JUDICIAL REVIEW OF EMERGENCY ACTIONS.—A court shall not enjoin an authorized emergency action under this section *if the court determines that the plaintiff is unable to demonstrate that the claim of the plaintiff is likely to succeed on the merits*. (Emphasis added).

The public will have to rely on the merits. It is necessary for the EA to prominently disclose the 'firesheds' in question.

### **The entirety of the Bitterroot Front project area does not meet conditions of an EAD**

The maps and analysis found in Bitterroot Front Project: Fire and Fuels Effects Analysis were helpful. According to Table 1. Historical fire return intervals and fire severity by vegetation type and associated map (Figure 1), 66 percent of the area falls within fire frequency classes I, II, (0-35+ yrs) frequent, or III (35-100 yrs) less frequent but predominately with low to mixed severity fire. This condition is fairly close to normal and acceptable. It certainly does not warrant an emergency action determination, which aborts the full range of the public involvement process. Only 34 percent is within fire frequency class IV (Aspen, mountain shrubland, semidesert grassland, riparian areas, and wetlands) with minor < 1% Engelmann spruce, subalpine fir and grand fir, historically with potential for stand replacement fires.

Based on Table 4. Wildfires since 1994 and acres burned in the Bitterroot Front project area, over 36,452 acres (25%) have experienced wildland fire since 1994. Of this approximately 36,000 acres burned since 2000 when the Blodgett and Upper Lick fires burned 7,662 acres. This is within the past 22 years, well within the natural/historic fire regime. Areas previously burned become part of a matrix that moderates intensity and severity of wildland fire. A 2014 study by Sean Parks et. al<sup>1</sup> found, "Results show burn severity is significantly lower in areas that have recently burned compared to areas that have not. This effect is still evident at around 22 years between wildland fire events. Results further indicate that burn severity generally increases with time since and severity of previous wildfire. These findings may assist land managers to anticipate the consequences of allowing fires to burn and provide rationale for using wildfire as a "fuel treatment".

According to Table 3. Vegetation condition classes (LANDFIRE 2022) in the Bitterroot Front project area, 60,757 acres or 42 percent of the project area are vegetative condition class (VCC) I A or B, within its natural/historic range and the risk of losing key ecosystem components is low. Another 25,737 acres (18%) is in VCC II.A moderate to low; fire regimes are moderately altered and risk of losing key ecosystem components is moderate to low. Another 6 percent is VCC II.B moderate to high, with fire regimes moderately altered and risk of losing key ecosystem components is moderate. This indicates 66% of the area is within natural range or with vegetative conditions low to moderately altered. An additional 12 percent is water or barren or sparsely vegetated. Thus, seventy-eight percent of the 144,000 is not currently subject to high severity, high intensity wildland fire.

Fewer than 32,000 acres is in VCC III.A (22 %), where "Fire regimes have been substantially altered from their natural (historical) range. The risk of losing key ecosystem components is high. Fire frequencies have departed from natural frequencies by multiple return intervals. Dramatic changes occur to one or more of the following: fire size, intensity, severity, or landscape patterns. Vegetation attributes

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<sup>1</sup> Parks, S.A. et al. 2014. Previous Fires Moderate Burn Severity of Subsequent Wildland Fires in Two Large Western US Wilderness Areas. *Ecosystems* (2014) 17: 29–42 DOI: 10.1007/s10021-013-9704-x

have been substantially altered from their natural (historical) range.” I don’t know if there has been disturbance other than fire such as in the form of management on any of these areas but it is something to consider. I’m assuming the four high risk fireheds that warranted emergency action determination and aborted public involvement opportunities, are within these 32,000 acres. In any case, 112,000 acres or 78 percent of the area are in a vegetative condition class within or low to moderate deviation from natural historic condition.

To claim that the entirety of the 144,000 acres Bitterroot Front project warrants an EAD is a misrepresentation of conditions and an abuse of the Infrastructure Act. Please focus the EAD where necessary and compliant with the Infrastructure Act. The entire project does not meet conditions of an EAD. The use of the EAD is dishonest and intended not to protect values at risk but to undermine public involvement. Out of respect for the involvement of the interested publics and our flagship environmental laws, I request the Responsible Official reconsider the emergency action determination (36 CFR 218.21). Use of the EAD would unnecessarily abort the opportunity for public involvement under the pre-decisional objection process and implement the project immediately after interested and affected parties are notified of the decision under most circumstances.

### **The project is inconsistent with the forest plan and purpose and need**

Appendix F: Forest Plan Consistency, Wildlife and Fish section, Standard 10: Beaver would be introduced into suitable riparian habitat. The analysis states that this standard is not N/A - Outside the scope of the project. This is not true. Page 4 of the EA states, “Specifically, the Bitterroot Front project aims to:

1. Reduce fire behavior and intensity by reducing the fuel quantity, modifying the arrangement of the fuels, and reducing the current and future wildfire risk to people, private lands, and resource values.
2. Improve forest landscape health and resilience by reducing the risk or extent of, or increasing resilience to, insect and disease infestation.
3. Reduce the risk to first responders and raise the probability of success during direct and indirect engagement on wildfires by treating fuels to modify fire behavior and increasing operational opportunities to protect values.

Beaver dams play an important role in meeting the purpose and need and are not outside the scope of this project. Beaver dams reduce fire behavior and intensity, fuel quantity, and modify the arrangement of fuels on the landscape; they improve forest landscape health and resilience; and raise probability of success during direct and indirect engagement by modifying fuels and fire behavior. Fairfax and Whittle (2020)<sup>2</sup> found “... that beaver-dammed riparian corridors are relatively unaffected by wildfire when compared to similar riparian corridors without beaver damming. On average, the decrease in NDVI during fire in areas without beaver is 3.05 times as large as it is in areas with beaver. However, plant greenness rebounded in the year after wildfire regardless of beaver activity. Thus, we conclude that, while beaver activity does not necessarily play a role in riparian vegetation post-fire resilience, it does play a significant role in riparian vegetation fire resistance and refugia creation.” Note: there is also science that found beaver may also play a role in the post fire environment.

This is only one of growing number of studies on the role of beaver damming, including in constraining wildland fires. In a review of the science on restoring western headwater streams by American Rivers<sup>3</sup>,

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<sup>2</sup> Fairfax, E., and A. Whittle. 2020. Smokey the Beaver: beaver-dammed riparian corridors stay green during wildfire throughout the western USA. *Ecological Applications* 30(8):e02225. 10.1002/eap. 2225

<sup>3</sup> Restoring Western Headwater Streams with Low-Tech Process-Based Methods: A Review of the Science and Case Study Results, Challenges and Opportunities. 2022. Jackie Corday for American Rivers.  
<https://www.americanrivers.org/resource/new-report-state-of-the-science-on-restoring-western-headwater-mountain-streams/>

Section 3.6.2 Wildfire – Beaver Complexes Serve as Wildfire Breaks and Refugia, reported, “Protected and restored wetlands can provide important fire breaks for wildfires and in some instances these areas have been found to rebound more quickly post-wildfire. A 2020 study by Fairfax and Whittle of five large wildfires in Colorado, California, Oregon, Idaho, and Wyoming showed that riparian vegetation around beaver complexes has a three times greater rate of survival from wildfire than stream segments without beavers. Photos like the one below taken the spring following the 2020 Cameron Peak Fire in Colorado are becoming important visual tools to show the dramatic losses from mega wildfires, except where there were sizeable beaver complexes. In addition to continuing to function and provide ecosystem service benefits such as debris ash flow filtration, the complexes also serve as important refugia to increase wildlife survival during and following wildfires. Moreover, healthy riparian corridors provide higher survivorship of post-fire mature trees, providing valuable seed sources for recovery.”

The wildlife section on grizzly bear is inadequate and outdated. Table 26 states, “The project area is contained within the Bitterroot Grizzly Bear Experimental Population Area and is adjacent to the Bitterroot Grizzly Bear Recovery Area. Grizzly bears may be present as transient individuals. One transient male was confirmed within the recovery area, but not within the project area, in summer 2019. However, the latest USFWS grizzly bear “may-be-present” habitat modeling has some overlap with the project area.” Yes they are. An April 18, 2013 article in the Missoulian reported that FWS responded to Judge Molloy, “Because of the change in circumstances arising from individual bears dispersing within the Bitterroot Ecosystem with greater regularity, the Service plans to take a fresh look at its strategy for supporting restoration of grizzly bears to the Bitterroot Ecosystem,” FWS wrote in its response to Molloy. “With the preparation of an EIS (environmental impact statement), the Service anticipates considering a range of alternatives, including options to facilitate natural recolonization through affirmative actions, such as identifying connectivity areas, addressing sanitation issues, future augmentation, and/or revising the recovery plan chapter for the Bitterroot Ecosystem. Because of the substantial public interest in the restoration of grizzly bears to the Bitterroot Ecosystem, the Service will conduct a public scoping process to invite input on the possible range of alternatives for consideration in the draft EIS.” In any case BES grizzly bear or those connecting to the BES are no longer considered an experimental population. As a non-biologist it is my understanding grizzly bear are threatened and endangered in the BES with all the legal requirements and protections the ESA entails.

### **Incorporating my 2022 comments**

Below, I’m incorporating the comments I submitted on May 19, 2022 during the scoping phase, which with little exception were not adequately addressed in this Environmental Assessment. I did notice a decrease in commercial intermediate harvest to 27,477 acres in total over the four phases that last an inordinate period of time under the proposal.

### **The proposal is based on an outdated and scientifically contested approach skewed toward vegetation removal, and leaves more current ‘tools’ better suited to “address the wildfire risk to our communities” off the table.**

The proposal is based on an outdated and scientifically contested approach skewed toward vegetation removal, and leaves more current ‘tools’ better suited to “address the wildfire risk to our communities” off the table.

While your cover letter touts plans to “*work* with other landowners, local organizations and other agency partners in an *all-lands approach*” it fails before leaving the gate because this *work* relies overwhelmingly on vegetation management on forest service land. On page 1 of the proposed action it states, “no management activities under private or other ownerships are considered with this proposal as we do not have jurisdiction to make decisions on non-NFS lands. Private landowners and other agencies are encouraged to consider taking appropriate action as necessary....”. So it’s an *all-lands* approach for

the State DNRC and other agencies and private landowners but it only goes one way? This leaves a lot of tools unused while the Bitterroot National Forest is hamstrung with a controversial project with little commitment and support from its *partners*, most notably the State of Montana.

In a recent initiative, the National Fire Protection Association identified five policies<sup>4</sup> to address protections in wildfire prone areas: “1) *ignition resistance for all homes and buildings through retrofits and other mitigation actions*; 2) *reliance on the latest codes, standards, and best land use planning practices to reduce risk for new construction and entire communities*; 3) *equipping first responders with the tools, training, and resources they need to protect their communities*; 4) *increasing resources for land management to reduce risk of catastrophic wildfires*; and 5) *educating the public on their role in wildfire risk reduction*.” The insurance industry also has a role.

Of these, land management to reduce fire risk is the primary tool applied in Montana. Other western states including California, Oregon, Washington and Colorado have been more proactive. Montana needs to do more than demanding logs trucked to the mills as proposed in the Montana Forest Action Plan. The State of Montana needs to institute requirements for: zoning in WUI, building codes for materials and design features, supporting public education for maintaining Home Ignition Zones, etc. Until all ‘*partners*’ get in the game, there is no ‘*shared stewardship*’ or ‘*all-lands*’ approach and the American taxpayer who is footing the bill needs to know that we are getting fleeced.

**The proposal does not adequately acknowledge the responsibility of individuals who choose to live in the Wildland Urban Interface such as to observe firewise practices.**

A primary purpose of the project is to reduce the risk of wildfire to communities and decrease the potential for high intensity wildfire. This ignores the fact that defense of structures is recognized as the most effective means to reduce the hazards of wildfire to communities and individual property and life. I again urge you to restrict commercial logging and focus instead on thinning to reduce fuels and risk of wildfire to within ¼ mile of structures. I think most citizens would support reasonable treatments such as pre-commercial thinning and prescribed fire to address impacts of decades of mismanagement.

There is a growing volume of science that rebukes landscape scale treatments as a means to reduce fire risk to communities and homes. This is a rapidly expanding field. Please document and discuss the available science to explain how the commercial logging proposed is necessary to reduce risk to homes that are miles away and the threat of wildfire on the landscape.

According to Cohen and Stratton (2008)<sup>5</sup> the vast majority of homes burned in wildland fires are burned by slow-moving, low- intensity fire, and defensible space within 100-200 feet of individual homes [reducing brush and small trees, and limbing up larger trees, while also reducing the combustibility of the home itself] effectively protects homes from fires, even when they are more intense. Gibbons et. al.<sup>6</sup>, determined that Defensible space work done within 40 meters [about 131 feet] of individual homes effectively protects homes from wildland fire, even intense fire. The authors concluded that the current management practice of thinning broad zones in wildland areas hundreds, or thousands, of meters away from homes is ineffective and diverts resources away from actual home protection, which must be focused immediately adjacent to individual structures in order to protect them.

Accusations that reduced logging has contributed to fire risk was rebuked more than 20 years ago. As early as September 2000<sup>7</sup>, the New York Times reported on a bipartisan Congressional Research Service report that found “no link between reduced logging over the past decade and wildfires raging

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<sup>4</sup> <https://www.nfpa.org/-/media/Files/About-NFPA/Wildfire-policy/WildfirePolicyOregonTestimony.ashx>

<sup>5</sup> Cohen, J.D., and R.D. Stratton. 2008. Home destruction examination: Grass Valley Fire. U.S. Forest Service Technical Paper R5-TP-026b. U.S. Forest Service, Region 5, Vallejo, CA.

<sup>6</sup> Gibbons, P. et al. 2012. Land management practices associated with house loss in wildfires. PLoS ONE 7: e29212.

<sup>7</sup> Egan, Timothy 2000. Fires not caused by reduced logging, Congressional Report Finds. New York Times. September 1, 2000.

through much of the west”. The article stated, “If anything, heavy logging from earlier years may have contributed more to the conditions that have made Western forests ripe for big fires, because more flammable small trees and heavy brush are often left in the forest after the larger stands of timber.” I fear that elements of the current proposal, in particular commercial harvest of the larger tree component, would exacerbate these conditions.

As reported in the LA Times (2019)<sup>8</sup>, studies in California found so called fuels logging gives citizens living in WUI a false set of security. Chopping down trees and shrubs is “an easy approach because people think ‘Oh, the thing we can change is vegetation’ ... and people want the problem to be fixed,” research scientist Alexandra Syphard said. “But unfortunately, it’s more complex than that.” Syphard — who conducted one of the few scientific assessments of the effectiveness of fuel breaks in California — worries that the state’s focus on fuel reduction gives “people a false sense of security.”

More recently, Missoula County Commissioner Dave Strohmaier and Jack Cohen published a guest column in the August 9 Missoulian<sup>9</sup> titled, *Community destruction during extreme wildfires is a home ignition problem*. I’ve attached a link below and encourage you read it and apply the concepts. The editorial board of the Los Angeles Times<sup>10</sup> also has a more recent article that dispels the legislation of Feinstein and Daines in favor of that of Kamala Harris (S. 2882) that targets community protection far more robustly than futile attempts to get a hold of the problem by logging the landscape.

Finally, on September 4, 2020 the New York Times published a feature titled *Americans Back Tough Limits on Building in Fire and Flood Zones*<sup>11</sup> that indicates a “majority support outright bans on construction in disaster-prone areas, as well as paying people to move, researchers say — policies that local governments have been reluctant to adopt.” The world is rapidly changing and the forest service would serve the American public better if it caught up.

The District would best serve the community by educating about the risks, realities, and responsibilities of choosing to live in the WUI. The Bitterroot is a beautiful place and it is understandable people love to live there, but it comes at a cost. It should not be the responsibility of the American taxpayer to protect these homes at all costs, which consumes the vast majority of wildfire budgets in these areas. Homes in the WUI should be assessed for fire hazard insurance. There are programs that would help offset the cost to help homeowners protect their homes. However, the American taxpayer should not be responsible for assuming the high cost to fight wildfire and the risk to firefighters. Montana State and Counties should also play a prominent role in zoning, building codes, education and other services such as Firewise to help homeowners protect their homes in these areas.

### **Project Objectives are inconsistent with landscape condition and best available science**

The first objective to reduce ‘hazardous’ fuels, made me take a second look. It appears relatively recent fires have already burned much of the Bitterroot Front. So, I called a friend who lived up Bear Creek to make sure. Sure enough she confirmed much of the Front is burned. From casual observation the area is still recovering from these fires. At the least a matrix is established that would limit fire spread.

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<sup>8</sup> LA Times. September 11, 2019. Forest thinning projects won’t stop the worst wildfires. So why is California spending millions on them? By [BETTINA BOXALL](#). Graphics by [JON SCHLEUSS](#).

<sup>9</sup> Strohmaier and Cohen August 9 2020. Community destruction during extreme wildfires is a home ignition problem. [https://missoulian.com/opinion/columnists/community-destruction-during-extreme-wildfires-is-a-home-ignition-problem/article\\_ef8aa717-99f1-5300-a137-3ebb25d6db00.html](https://missoulian.com/opinion/columnists/community-destruction-during-extreme-wildfires-is-a-home-ignition-problem/article_ef8aa717-99f1-5300-a137-3ebb25d6db00.html)

<sup>10</sup> Los Angeles Times Editorial: A better way to help Californians survive wildfires: Focus on homes, not trees <https://www.latimes.com/opinion/story/2020-09-22/wildfire-safety-strategy>.

<sup>11</sup> Americans back tough limits on building in fire and flood zones. New York Times, September 4, 2020. <https://nyti.ms/31YQY5N>

Table 1: Fire regime data for the project area, indicates that 37% of the project area has burned in the past 35 years and another 29% burned between 35-100 years ago. Despite the modeling and good work of Arno, it is unlikely our forests are going back to historical conditions, especially with the current condition resulting from a century of chainsaw management. This is an east-facing slope, broken by numerous steep sided canyons, some which also have experienced fire in recent years. Climate change may impede reestablishment of forest vegetation.

### **The Bitterroot Front Project Impedes Connectivity and Grizzly Bear Recovery**

Ravalli County has one of the highest population growths in Montana and along with it the pressures of housing, infrastructure development and threats of unrestrained desires for recreation. This growth and development obstruct safe passage of wildlife, including threatened, endangered and sensitive species most notably grizzly bear, which once extirpated from the Bitterroot is slowly naturally returning. The excessive 144,000-acre extent of the Bitterroot Front Project threatens this recovery and serves as a wall to connectivity for grizzly bear and other wildlife species that negotiate the hazards of development in the Valley on their way from the Sapphires to secure habitat in designated Wilderness and the Bitterroot Ecosystem Recovery Area. The project is likely to adversely affect grizzly bear and to impact individuals or habitat for lynx, bald eagle, bighorn sheep, gray wolf, and peregrine falcon as well as vegetation unique to the area.

Connectivity was identified as a key indicator for assessing effects to grizzly bears in the *Amendment of the Helena, Lewis and Clark, Lolo and Kootenai National Forest Plans to Incorporate Relevant Direction from the [Draft] Northern Continental Divide Ecosystem Grizzly Bear Conservation Strategy* (NCDE Four Forest Grizzly Amendment). Connectivity was also a key factor in Judge Christensen's ruling<sup>12</sup> pertaining to the Greater Yellowstone grizzly bear delisting and upheld by the Ninth Circuit, that the U.S. Fish & Wildlife Service must ensure connectivity between isolated grizzly bear subpopulations.

While the Bitterroot Ecosystem is currently considered unoccupied Grizzly bear dispersal is happening. There have been a number of sightings in recent years and it is not unlikely that female bears will be establishing home ranges in the Bitterroot Ecosystem during the projected period of this project, if management activities do not thwart expansion. Providing for linkage habitat must be included as an objective in the proposal and purpose and need. An assessment of the quality and quantity of suitable habitat should be included in the analysis.

#### Proposed improvements on the road system to increase access would reduce grizzly bear security

A vague discussion on the existing transportation system indicates some of the roads in the area have not been used in decades. This section states, "Many areas have also had recent wildfire events resulting in post fire hydrology that can also have impacts". These would need extensive improvements and change the accessibility to the area. Increased access would negatively affect grizzly bear, elk and other wildlife species. These effects and a no new roads alternative need to be analyzed.

### **Commercial harvest in inventoried roadless areas diminish opportunities for habitat and connectivity**

As stated on page 9 of the proposal, "Of the 55,133 acres of commercial harvesting across the project area, just over 13,000 acres falls in inventoried roadless areas". Over 5,000 acres is proposed in Lost Horse alone. No mention is made of the 2001 Roadless Rule that guides management of roadless areas<sup>13</sup>. In any case, any entry into roadless areas even without road construction or road reconstruction

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<sup>12</sup> Crow Indian Tribe, et al. v. United States of America, et al. (Case 9:17- cv-00089-DLC Document 266, Filed 9/24/18)

<sup>13</sup> The 2001 Roadless Area Conservation Rule was adopted by the U.S. Department of Agriculture to conserve Inventoried Roadless Areas on National Forest System lands. Inventoried Roadless Areas are areas identified in a set of maps, contained in

is unacceptable especially at this scale. Please remove any commercial or non-commercial harvest in roadless areas from the project.

Based on the forest service's analysis for the Roadless Rule,<sup>14</sup> "results of our evaluation highlight the value of inventoried roadless areas towards maintaining a representative network of *relatively* (emphasis added) undisturbed areas that function as conservation reserves in the United States, supporting a diversity of plant and animal species. The conservation of inventoried roadless areas under the action alternatives would expand ecoregional representation, increase acreage of low elevation, biologically productive areas, and increase the number of areas large enough to provide refugia for species needing large tracts relatively undisturbed by people."

Develop and fully analyze an alternative without entry into IRAs. Roadless areas should be analyzed in an EIS for remoteness, habitat and connectivity, and conservation opportunities for grizzly bear and other species that seek older forests, however imperfect. In the EIS, please include a detailed analysis of the effects of the proposal to reduce or eliminate forest protections and log in the IRAs, based on the belief that restrictions on active management have or will increase fire severity<sup>15</sup>. Discuss how and why logging in these areas, at some distance from private property would protect the community more than establishing and improving Home Ignition Zones closer to values at risk.

**The proposal must adequately acknowledge the ecological role and resource benefits of wildland fire and the ecological tradeoffs of active management on resources.**

Development and analysis of the proposal must be fully consistent with today's understanding of the role and behavior of fire on the landscape. It should consider variability across the landscape, including the role of fire refugia<sup>16, 17</sup>. While the proposal indicates treatments would be designed to return wildfire to the landscape, it is skewed to harvest rather than consideration of other ways of accomplishing the objective of reducing the current and future risk to people and private property and lands.

In a study of fire refugia in central Washington, Kolden et.al's (2017)<sup>18</sup> found, "almost all of the plots burned, but half of the plots persisted in their pre-fire forest structure successional state, suggests that definitions of fire refugia focused on the maintenance of forest structure or canopy thresholds may reveal a higher proportion of refugia that are persistent through multiple fires." The study of fire refugia is not a new science. Fire refugia are an important element in fire behavior and wildfire patterns and must be modeled, mapped on the landscape, and considered and analyzed in the EIS.

Krawchuck<sup>19</sup> (2016) found:

"Identifying the locations of topographic fire refugia in forested landscapes can inform forest harvest, fire operations, landscape restoration, and conservation. Forest harvest plans typically

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the Forest Service Roadless Area Conservation Final Environmental Impact Statement Volume 2, dated November 2000 (36 CFR 294.11).

<sup>14</sup> USDA Forest Service Roadless Area Conservation Final Environmental Impact Statement. November 2000. Landscape Analysis and Biodiversity Specialist Report.

<sup>15</sup> Bradley, C. M., C. T. Hanson, and D. A. DellaSala. 2016. Does increased forest protection correspond to higher fire severity in frequent-fire forests of the western United States? *Ecosphere* 7(10): e01492. 10.1002/ecs2.1492

<sup>16</sup> Camp et.al 1997, Predicting late-successional fire refugia pre-dating European settlement in the Wenatchee Mountains - In: *Forest Ecology and Management* July 1997.pdf.

<sup>17</sup> Meddens et.al. 2018. Fire Refugia: What are they and why do they matter for global change. In *BioScience* XX: 1–11. Published by Oxford University Press on behalf of American Institute of Biological Sciences 2018. This work is written by (a) US Government employee(s) and is in the public domain in the US. doi:10.1093/biosci/biy103

<sup>18</sup> Kolden et.al. 2017. Fire Effects on Historical Wildfire Refugia in Contemporary Wildfires. In *Forests* 2017.

<sup>19</sup> Krawchuk, M. A., S. L. Haire, J. Coop, M.-A. Parisien, E. Whitman, G. Chong, and C. Miller. 2016. Topographic and fire weather controls of fire refugia in forested ecosystems of northwestern North America. *Ecosphere* 7(12):e01632. 10.1002/ecs2.1632



have stand-level requirements for variable retention and maintenance of tree islands. Increasingly, thinning is used to reduce the risk of forest fires (Agee and Skinner 2005), often based on the philosophy of emulating natural disturbance. Wildfire management frequently utilizes burnouts as a safety measure to clear flammable vegetation from within the anticipated fire perimeter. Unfortunately, all of these practices may be altering, or removing, critical patches and corridors for the establishment, persistence, and movement of organisms in burn mosaics. In an era of increasing concern over undesirable ecological outcomes of fire, our thinking needs to remain focused on the important landscape heterogeneity generated by burning. This pyrodiversity includes low-severity/unburned refugia through to high severity fire and the landscape mixtures in between (Agee 1993, Perera and Buse 2014, DellaSala and Hanson 2015, Hutto et al. 2016) all as components of fire-resilient ecosystems, though the frequency, extent, and proportions of fire severities differ importantly among vegetation types. Our conceptual framework advances understanding of the predictability, structure, and function of topographic fire refugia as a component of contemporary burn mosaics in western North America.”

Rhodes and Baker<sup>20</sup> considered fuels treatment in context of ecological risks. They documented that:

“Although some fuel-treatment methods could have lower impacts, ground-based mechanical treatments are often employed because other methods generate activity fuels and are more costly. Ground-based methods and associated machine piling, burning of activity fuels, construction and increased use of roads and landings can increase soil erosion, compact soils, and elevate surface runoff. Although the effects of prescribed fire on watersheds are typically limited and fleeting, it can increase soil erosion and sediment delivery, sometimes significantly and persistently, especially if fires escape and burn larger and more severely than planned.

When impacts are extensive, proximate to streams, or in terrain with erosion hazards, treatments can increase runoff and sediment delivery to streams. Road activities that increase sediment production, such as elevated road traffic, often affect stream crossings where sediment delivery is typically efficient and difficult to control. Elevated sediment delivery to streams contributes to water quality degradation that impairs aquatic ecosystems.

The extent and frequency of treatments may be significant. Stephens and Ruth suggested treating fuels on 9.4 million ha, or ~53% of USFS lands in the Pacific Northwest and California. Agee and Skinner suggested repeating treatments every 10-20 years, due to transient effects on fuels.

Repeated treatments increase the potential for cumulative effects on aquatic ecosystems due to the persistence and additive nature of watershed impacts over time and may increase the establishment of non-native plants. The chronic watershed impacts from repeated treatments may be more deleterious to native fish than pulsed disturbances from wildfires.

Additional degradation of aquatic habitats on public lands may hamper efforts to protect and restore aquatic biodiversity. These habitats are increasingly important as cornerstones for restoring aquatic ecosystems and native fish.”

Rhodes and Baker recognized that while their “analysis focuses on higher-severity fire in bounding the effectiveness of fuel treatments and its net watershed effects, these fires do not have solely negative effects. Higher-severity fire benefits watersheds and aquatic ecosystems in several ways, including providing a bonanza of recruitment of large wood and pulsed sediment supply that can rejuvenate aquatic habitats and increase their productivity. High severity fire is also a key process for the restoration of structural heterogeneity in forests, which is important for biodiversity.” They concluded: “At the scales of our analysis, results indicate that even if fuel treatments were very effective when encountering fire of any severity, treatments will rarely encounter fire, and thus are unlikely to

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<sup>20</sup> Rhodes J.R. and W.L. Baker 2008. Fire Probability, Fuel Treatment Effectiveness and Ecological Tradeoffs in Western U.S. Public Forests. In: *The Open Forest Science Journal*, 2008, Volume 1 1874-3986/08

substantially reduce [ecological] effects of high-severity fire.”

As Bradley et.al concluded<sup>21</sup>:

“In general, our findings—that forests with the highest levels of protection from logging tend to burn least severely—suggest a need for managers and policymakers to rethink current forest and fire management direction, particularly proposals that seek to weaken forest protections or suspend environmental laws ostensibly to facilitate a more extensive and industrial forest–fire management regime. Such approaches would likely achieve the opposite of their intended consequences and would degrade complex early seral forests (DellaSala et al. 2015). We suggest that the results of our study counsel in favor of increased protection for federal forestlands without the concern that this may lead to more severe fires.

“Allowing wild fires to burn under safe conditions is an effective restoration tool for achieving landscape heterogeneity and biodiversity conservation objectives in regions where high levels of biodiversity are associated with mixed-intensity fires (i.e., “pyrodiversity begets biodiversity,” see DellaSala and Hanson 2015b). Managers concerned about fires can close and decommission roads that contribute to human-caused fire ignitions and treat fire-prone tree plantations where fires have been shown to burn uncharacteristically severe (Odion et al. 2004). Prioritizing fuel treatments to flammable vegetation adjacent to homes along with special measures that reduce fire risks to home structures are precautionary steps for allowing more fires to proceed safely in the backcountry (Moritz 2014, DellaSala et al. 2015, Moritz and Knowles 2016).

“Managing for wild fire benefits as we suggest is also consistent with recent national forest policies such as 2012 National Forest Management Act planning rule that emphasizes maintaining and restoring ecological integrity across the national forest system and because complex early forests can only be produced by natural disturbance events not mimicked by mechanical fuel reduction or clear-cut logging (Swanson et al. 2011, DellaSala et al. 2014). Thus, managers wishing to maintain biodiversity in re-adapted forests should appropriately weigh the benefits of wild fires against the ecological costs of mechanical fuel reduction and fire suppression (Ingalsbee and Raja 2015) and should consider expansion of protected forest areas as a means of maintaining natural ecosystem processes like wildland fire.”

In the proposal terms such as ‘hazardous fuels’ and ‘uncharacteristic wildfire’ are used. Please define these and describe the parameters by which you are going to assess and evaluate these when comparing alternatives. Please provide a rigorous discussion of the role of wildland fire on the landscape and how fire suppression and logging might damage not help forest function and health. As it is, the proposal relies too narrowly on vegetative treatment and road access to haul timber.

Analyze the cost to benefit in financial terms to the forest service and other taxpayer funded government agencies. Discuss as well as the cost and benefits to wildlife, water quality, fisheries and other ecosystem functions. Discuss the insect and disease mentioned, including prevalence and why it is uncharacteristic. Discuss as well the current scientific understanding of the ecological role of these natural forest functions and how removing these would benefit or harm forest health and resilience, including reducing genetic diversity in the post harvest residual stands.

### **New road construction and expansion of the national forest road system**

Any new road construction or expansion of the viable road system through incorporating ‘undetermined roads’ into the existing road system is unconscionable. Develop and fully analyze an alternative around

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<sup>21</sup> Bradley, C. M., C. T. Hanson, and D. A. DellaSala. 2016. Does increased forest protection correspond to higher re severity in frequent- re forests of the western United States? *Ecosphere* October 2016 Volume 7(10): e01492. 10.1002/ecs2.1492. [www.esajournals.org](http://www.esajournals.org).

no new road construction or expansion of the road system. The Transportation Analysis Process is not adequate, nor is it acceptable to couch such an important topic in project files away from public view.

Construction of new roads could be more detrimental to the landscape, water quality and wildlife over the short and long term than wild land fire. Roads are the major source of wildlife habitat fragmentation and degradation of water quality. They are recognized as the major source of chronic sediment delivery to streams and have the potential to fail, discharging large pulses of sediment. Roads also change the landscape by direct habitat loss, and can serve as travel ways that give advantage to certain predators. They degrade native habitat by being a vector of weeds that compete with native plants. Wild land fires most often are started within road corridors. Roads should be accounted physically removed.

Road maintenance is costly to the taxpayer and a burden on the operating budget of any administrative unit. It is unlikely that the enormous backlog of poorly or unmaintained roads in the forest service system will ever be fully addressed. Please disclose and analyze in detail the purpose, needs, and estimated costs and long-term maintenance expenditures and funding by road segment for any road proposal. Provide analysis of short and long term sediment delivery to streams and effects on fisheries.

### **Implementing a Forest Plan Amendment disregards the National Forest Management Act requirements for forest plan revisions**

A lot has changed in the thirty-five years since the Bitterroot National Forest completed its Land Management Plan in 1986. That is to be expected and is why the National Forest Management Act (NFMA) provided for forest plan revisions every 10-15 years or whenever conditions have changed sufficiently. By any measure the Bitterroot NF is long overdue for a forest plan revision.

The rash of forest plan amendments being proposed project-by-project and forest-wide is not a substitute for a forest plan revision. Such piecemeal amendments abrogate the legal framework of the existing forest plan that has sufficed for 35 years. The pattern of recent amendments including Mud Creek and Gold-Butterfly and as proposed for the Bitterroot Front do not comprehensively address the changing conditions and values on the landscape including changing climate and laws.

The discussion of project-specific forest plan amendments on page 16 is inadequate to comment. I expect that the pursuing environmental analysis will clearly describe the desired amendments and site-specific application and how the proposed amendments will achieve the purposes of the project. Reducing fuels is the easy part, which any chainsaw can accomplish. Improving landscape resilience to disturbance is not so easy, especially when the tendency is to move on to the next ripe crop rather than maintain the areas disturbed by past management, within 10 and no longer than 20 years. [Rhodes and Baker<sup>22</sup> examined the effectiveness of fuels treatments over time and the non-treatment risks based on probability of fire occurrence in western forests and the transient nature of fuels treatment. They estimated that fuel treatments have a mean probability of 2.0-7.9% of encountering moderate- or high-severity fire during an assumed 20-year period of reduced fuels. If wild fire doesn't encounter a treated area, there is no or reduced efficacy to the treatment.]

The section on forest plan amendments clearly states, "the Forest supervisor is required to apply the directly related planning regulation requirements described at 36 CFR 219.8 through 219.11 to the amendment". It then goes on to narrowly focus on 36 CFR 219.8(a)(1)(iv) and (v). Please also address section 219.9, Diversity of Plant and Animal Communities, in its entirety as these pertain to elk habitat objectives stated, along with habitat needs for a host of other species including grizzly bear. Again, I strongly question the appropriateness of using forest plan amendments as a strategy to push through projects that do not comply with the forest plan. I question the legality of the growing use of

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<sup>22</sup> Rhodes J.R. and W.L. Baker 2008. Fire Probability, Fuel Treatment Effectiveness and Ecological Tradeoffs in Western U.S. Public Forests. In: *The Open Forest Science Journal*, 2008, Volume 1 1874-3986/08

project and forest-wide amendments as a surrogate for the landscape level scope of a legally mandated forest plan revision. Development of long-term management plans as required by NFMA addresses multiple implications and considerations over a long temporal and broad spatial scale. It's time the Bitterroot adheres to the NFMA and revises its forest plan. Until then, comply with the existing plan.

### **The references and best available science need to be updated**

This proposal is putting 144,00 acres of the public's land in the hands of forest service resource specialists and decision-makers. It is 2022. Of the nine references cited, not to disparage Arno and the others but four were dated from before the Bitterroot Forest Plan. Three references were from the 1990's and only two from 2000's with the most recent 2011 (an errata sheet for a 1992 publication).

I am updating this section to include another paper authored by Andrew Larson<sup>23</sup> in addition to the 1996 paper used, "... we encourage managers to consciously adopt a view of forest structure that accommodates spatial heterogeneity within forest stands, and to use this conceptualization of forest structure to guide prescription development. Restoration prescriptions and marking guidelines that explicitly incorporate within-stand spatial heterogeneity—such as by specifying the numbers and sizes of openings and tree clumps, and the number of widely-spaced single trees to retain per unit area—will improve the likelihood of restoring characteristic forest structures and the ecological processes such structures support." The best-available science around wildland fire, including efficacy of logging the landscape as a method to mitigate is rapidly evolving and best available science must be used.

Thank you for the opportunity to comment.

Sincerely,

*/Claudia Narcisco*

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<sup>23</sup> Larson, A.J and D. Churchhill. 2012. Tree spatial patterns in fire-frequent forests of western North America, including mechanisms of pattern formation and implications for designing fuel reduction and restoration treatments.